

REMARKS

Upon entry of the present amendment, claims 1-17 are pending in the application.

No claims have been amended, canceled, or added.

Reconsideration is respectfully requested in view of the following remarks.

1. **Rejection of claims 1-17 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,284,037 to Sapper, hereafter "Sapper", in view of CA 2,154,818 to Bergfried et al., hereafter "Bergfried".**

Independent claim 1 is directed to an aqueous pigment paste free from binders and grinding resins, comprising based on its overall amount (A) from 15 to 25% by weight of at least one mica pigment, (B) from 0.45 to 0.75% by weight of at least one nonassociative thickener comprising at least one methacrylate copolymer based on C₁-C₆ alkyl (meth)acrylate and (meth)acrylic acid, (C) from 0.1 to 0.4% by weight of at least one organic amine, (D) from 0.1 to 12% by weight of at least one nonionic surfactant, and (E) at least 50% by weight of water.

Sapper teaches the use of a polymer dispersion as an additive for coating formulations, the dispersion comprising (i) an acrylate polymer based on from 30-60% by weight of C₁-C₈ alkyl (meth)acrylate monomers, from 30 to 60% by weight of vinylaromatic monomers and from 0.5 to 10% by weight of (meth)acrylic acid, and (ii) a nonassociative rheology stabilizer comprising an acrylate copolymer based on C₁-C₆-alkyl (meth)acrylate and (meth)acrylic acid. (Sapper, abstract).

Bergfried teaches a pigment concentrate consisting of 40-60% of an electrically conductive pigment based on metal oxides, 2-4.9% of a terpolymeric, anionic polyacrylate, 0.1-4.9% of an amine, so that a pH of 7.0 to 10.0 results, 0.1-0.9% of a nonionic, surface active addition product of ethylene oxide and an alkylphenol, an alcohol or a carboxylic acid, 0-2.0% of a thickener based on a polyacrylate, a polyurethane or a cellulose derivative, 0-6.0% of a glycol derivative as well as 21.3-57.8% of water. (Bergfried, abstract).

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing that all elements of the invention are disclosed in the prior art; that the prior art relied upon, or knowledge generally available in the art at the time of the invention, must provide some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references; and that the proposed modification of the prior art must have had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988).

Applicants respectfully submit that the present claims are patentable over the combination of Sapper and Bergfried because such combination does not meet the above standard.

Firstly, Applicants respectfully submit that the combination of Sapper and Bergfried does not teach all the elements of independent claim 1.

Applicants respectfully submit that a grinding resin is one that generally has good pigment wetting capability and broad resin compatibility. In general, such resins would contain different classes of monomers such as acrylates and vinyl aromatics, i.e. styrene.

For example, Applicants respectfully refer the Examiner to U.S. Patent No. 6,476,170 to Roth et al., hereafter "Roth". Roth teaches a process for making acrylic resins suitable as polymeric surfactants used in emulsion polymerization, as pigment grinding resins and for preparing dispersions used as overprint varnishes. (Roth, abstract, emphasis added). The resin comprises styrene and α -methylstyrene in a 1:2 to 1:4 mole ratio based on the monomeric mole total. (Roth, column 4, lines 6-44). Therefore, Roth teaches that an acrylic copolymer containing styrene and/or vinyl aromatic monomers is a grinding resin.

Applicants also respectfully refer the Examiner to U.S. Patent No. 6,630,211 to Baumgart et al., hereafter "Baumgart". Baumgart teaches the preparation of a polyacrylate as a grinding resin. (Baumgart, column 20, line 8, emphasis added). The

polyacrylate comprises styrene. (Baumgart, column 20, line 17). Therefore, Baumgart also teaches that polyacrylates comprising styrene monomers are grinding resins.

Sapper teaches a polymer dispersion which comprises, among others, (i) an acrylate polymer based on from 30-60% by weight of C1-C8 alkyl (meth)acrylate monomers, from 30 to 60% by weight of vinylaromatic monomers and from 0.5 to 10% by weight of (meth)acrylic acid. (Sapper, abstract). Examples of vinylaromatic monomers present as monomer units in the acrylate polymer of component (i) include styrene, α -alkylstyrene and vinyltoluene. (Sapper, column 2, lines 21-23).

Therefore, Sapper teaches a composition that, among other things, contains a grinding resin. On the other hand, Applicants' independent claim 1 recites an aqueous pigment paste free from binders and grinding resins.

For at least this reason, Sapper does not obviate the present claims.

Bergfried does not remedy this deficiency in Sapper since Bergfried does not teach or suggests the exclusion of a grinding resin.

In addition, in making this rejection, it is understood that the Examiner is extracting the elements of independent claim 1 from Sapper, even though the Examiner concedes "Sapper does not disclose preparing a pigment paste without binder comprising mica, nonassociative rheology stabilizer, nonionic surfactant, and amine compounds". (10/15/07 Office Action, page 2, fourth paragraph).

In fact, Sapper does not teach or suggest the limitations of independent claim 1 in any way since Sapper is not concerned with pigment pastes or their preparation. Sapper is concerned with the use of a polymer dispersion as an additive for coating formulations. The polymer dispersion comprises an acrylate polymer and a nonassociative rheology stabilizer.

In Sapper's examples, Sapper discloses adding the dispersion of the polymer additive (which comprises a binder and a non-associative rheology stabilizer) to two paint compositions. One of the two paint compositions (paint 2), referred to by the Examiner,

consists of a polyurethane dispersion, OH-containing resin polyester, melamine resin, isobutanol, n-butanol, 2-butoxyethanol, isopropoxypropanol, butoxypropanol, butyl diglycol, synthetic silicate thickener, dimethylethanolamine, water, blue pigment, mica pigment, and polypropylene glycol. (Sapper, column 4, lines 25-65). Sapper, and specifically this paint composition referred to by the Examiner, do not teach, suggest, motivate or even allude to an aqueous pigment paste that is free from binders and grinding resins as presently claimed in independent claim 1. In fact, there's no mention in Sapper of using a pigment paste whatsoever, only the inclusion of certain pigments. (Emphasis added).

The Examiner alleges that in view of Bergfried, Applicants' composition can be extracted from Sapper. That is, out of seventeen components exemplified in Sapper, including four binders, one with ordinary skill in the art would be motivated to arrive at Applicants' claim 1 by independently selecting claim 1's elements from among the seventeen components, which also include four binders. However, since as discussed above Sapper does not teach, suggest, motivate, or even allude to a pigment paste, let alone an aqueous pigment paste that is free from binders and grinding resins as presently claimed in independent claim 1, Applicants respectfully assert that the Examiner is arriving at her construction through the use of improper hindsight.

The CAFC has stated that "to imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher. *W.L. Gore & Assocs., Inc., v. Garlock*, 220 U.S.P.Q. 303, 312-313. (Fed. Cir. 1983).

Therefore, Applicants respectfully assert that the present claims are patentable over Sapper and Bergfried and respectfully request the withdrawal of this rejection, which is improperly arrived at through the use of hindsight.

In addition, the Examiner, while conceding "Sapper discloses an amount of mica pigment in a coating composition less than presently claimed and Bergfried discloses an amount of pigment more than presently claimed", the Examiner states "it is considered

that the amount of pigment is determined by the desired metallic effect and would have been obvious to one of ordinary skill in the art to utilize a suitable amount of mica in a pigment paste in order to get the desired metallic effect in a final coating comprising the pigment paste". (10/15/07 Office Action, page 3, second paragraph).

Applicants respectfully disagree. It is generally known in the art of pigment pastes that the maximum amount of pigment should be included, without adversely affecting other desirable properties such as stability, storage duration, processability, and the like. One with ordinary skill in the art would not be motivated to modify the amount of pigment within a paste to arrive at a specific amount of pigment within a composition where the paste is to be used. Instead, it is generally known that one with ordinary skill in the art would adjust the total amount of the pigment paste, not the amount of pigment within the paste, because the amount of pigment within the paste is generally constant and specific to each paste. Thus one of skill in the art will not find any motivation to make a high concentration (15-25%) mica pigment paste from a reference that only teaches the use of a final coating having mica in a relatively low concentration.

In addition, in arriving at this construction, the Examiner equates Bergfried's electrically conductive pigment based on metal oxides to Applicants' mica pigment. Applicants respectfully submit that this alleged equivalency is improper because it is generally known in the art that when it comes to aqueous solution behavior and stability, an electrically conductive pigment based on metal oxides is substantially different from a mica pigment.

The courts have held that "[i]n order to rely on equivalence as a rationale supporting an obviousness rejection, the equivalency must be recognized in the prior art, and cannot be based on applicant's disclosure or the mere fact that the components at issue are functional or mechanical equivalents". *In re Ruff*, 256 F.2d 590, 118 USPQ 340 (CCPA 1958).

Therefore, even if the combination of Sapper and Bergfried was proper, which it is not, one with ordinary skill in the art would not be motivated to arrive at Applicants' claim 1 at least because Bergfried's electrically conductive pigment based on metal

oxides is substantially different from Applicants' mica pigment in terms of aqueous solution behavior, stability, and the like.

Secondly, Applicants respectfully submit that the combination of Sapper and Bergfried does not provide motivation to arrive at Applicants' independent claim 1.

As discussed above, Sapper discloses a composition comprising a mica pigment among seventeen components, four of which being binders. Sapper does not teach, suggest, motivate, or even allude to an aqueous pigment paste that is free from binders and grinding resins such as the one in Applicants' independent claim 1. Without the use of improper hindsight, there would be no motivation to arrive at Applicants' independent claim 1 by combining Sapper with Bergfried, especially because Bergfried is concerned with electrically conductive pigment based on metal oxides, which are substantially different from Applicants' mica pigment.

Thirdly, Applicants respectfully submit that the proposed modification of the prior does not have a reasonable expectation of success.

The proposed modification by the Examiner entails extracting specific elements from a combination of seventeen elements, four of which being binders. Such modification would not have a reasonable expectation of success unless it was the product of improper hindsight, which is impermissible according to the courts as discussed above.

In view of the above, Applicants respectfully assert that independent claim 1, and consequently, dependent claims 2-17 are patentable over the combination of Sapper and Bergfried because this combination does not provide for a prima facie case of obviousness. Withdrawal of this rejection is respectfully requested.

2. Rejection of claims 1-4 and 6-14 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 3,980,602 to Jakubauskas, hereafter "Jakubauskas", in view of Sapper and Bergfried.

Jakubauskas teaches an acrylic polymer dispersant useful for preparing pigment dispersions utilized in aqueous acrylic coating compositions, the acrylic polymer is of 1.

styrene, an alkyl methacrylate such as methyl methacrylate, isodecyl methacrylate or stearyl methacrylate or a mixture of styrene and an alkyl methacrylate; 2. an alkyl acrylate having 2-12 carbon atoms in the alkyl group; and 3. acrylic acid or methacrylic acid; the acrylic polymer has a glass transition temperature of about -90° C to 70° C and a weight average molecular weight of about 500-30,000. (Jakubauskas, abstract).

Since Jakubauskas teaches a grinding resin, that is, an acrylic resin containing 20-80% by weight of styrene, Jakubauskas cannot obviate the present claims. The combination of Sapper and Bergfried does not remedy this deficiency in Jakubauskas, since as discussed above, Sapper teaches the use of a grinding resin, and Bergfried does not teach the exclusion of the same.

Further, Jakubauskas is concerned with making a pigment dispersion, which is then blended with an aqueous coating composition. (Jakubauskas, column 1, lines 50-55; examples wherein pigment mill bases are prepared and then mixed with a paint composition; claim 1 “an acrylic polymer dispersant for dispersing pigments in aqueous acrylic paints”).

Jakubauskas does not teach, suggest, or allude to “an aqueous pigment paste comprising mica pigments [that] ought to be storable for more than one year without settling and without the formation of inhomogeneities or coagulum”. (Application as filed, paragraph [0007]).

In making this rejection, the Examiner is of the position that Jakubauskas discloses a metallic flake pigment such as exemplified mica, and in doing so cites col. 2, line 65 to col. 3, line 11 as well as col. 12, line 8 of Jakubauskas (10/15/2007 Office Action, page 3, final paragraph).

Applicants respectfully submit that in column 2, line 65 to column 3, line 11, Jakubauskas does not teach or suggest mica as stated by the Examiner. Jakubauskas specifically teaches “[t]he acrylic polymer dispersant is particularly useful in forming stable dispersions of aluminum flake and other metallic flakes. [...] In either case, the

resulting aluminum dispersion is stable and an emission of hydrogen gas does not occur”. (Jakubauskas, column 2, line 65, to column 3, line 11).

That is, in the above citation, Jakubauskas does not teach or suggest mica, but only aluminum flake and other metallic flakes. Mica is not an aluminum flake or other metallic flake.

In fact, Jakubauskas further teaches “[f]or pigments which are particularly difficult to disperse, [...]” and “[t]ypical pigments that can be formed into pigments dispersion with the acrylic polymer dispersant using one or more of the above methods are as follows [...]”. (Jakubauskas, column 3, lines 27-57). Jakubauskas is silent regarding mica in the foregoing disclosure.

In column 12, line 8, as cited by the Examiner, Jakubauskas teaches a mica mill base prepared by mixing 14 parts by weight of the neutralized acrylic dispersant solution, 26 parts by weight deionized water, and 60 parts by weight mica, based on a total of 100 parts by weight. The above ingredients are premixed and ground as above and then filtered. A white latex paint is then prepared by mixing the above with an aqueous latex. (Jakubauskas, column 11, line 68, to column 11, line 36).

Applicants respectfully submit that the above 14 parts by weight of the neutralized acrylic dispersant solution include 7 parts by weight of the acrylic polymer, which is the equivalent of 7 weight percent (wt%), since the mica mill base is based on 100 parts by weight.

Applicants further respectfully submit that in the above mica mill base, water is present in 26 wt%, and mica is present in 60 wt%. In addition, the mica mill base does not include a nonionic surfactant. On the other hand, Applicants' independent claim 1 recites a nonionic surfactant, and further recites from 15 to 25% by weight of at least one mica pigment and at least 50% by weight water, neither of which is taught or suggested by Jakubauskas.

Therefore, Applicants respectfully assert that Jakubauskas does not teach or suggest all the elements of independent claim 1 because Jakubauskas at least fails to

teach or suggest (A) from 15 to 25% by weight of at least one mica pigment, (B) from 0.45 to 0.75% by weight of at least one nonassociative thickener comprising at least one methacrylate copolymer based on C₁-C₆ alkyl (meth)acrylate and (meth)acrylic acid, (D) from 0.1 to 12% by weight of at least one nonionic surfactant, and (E) at least 50% by weight of water.

Not only does Jakubauskas' exemplified mica mill base disclose an amount of the acrylic polymer - which is construed by the Examiner to be the equivalent of Applicants' nonassociative thickener - that is substantially greater than Applicants' (7 wt% in Jakubauskas versus 0.45 to 0.75 wt% in claim 1), but also Jakubauskas does not teach or suggest Applicants' 0.45-0.75 wt% because Jakubauskas teaches that "the weight ratio of pigment to acrylic polymer dispersant in the dispersion is about from 1:100 to about 100:10". (Jakubauskas, column 2, lines 60-63).

Therefore, Jakubauskas teaches that the amount of acrylic polymer dispersant in the dispersion is about 9 wt% (10/110) to about 99 wt% (100/101). Therefore, Jakubauskas teaches an amount of the acrylic polymer dispersant which is substantially greater than that of Applicants' 0.45-0.75 wt% not only in the above exemplified mica base mill, but also throughout the disclosure.

In addition, the Examiner concedes Jakubauskas does not teach or suggest Applicants' nonionic surfactant. The Examiner relies on Sapper and Bergfried to teach a non-ionic surfactant within the claimed amounts by asserting "[g]iven that Jakubauskas discloses a pigment with an acrylic emulsifier and further given that such emulsifier preferably used with nonionic surfactants as taught by Sapper, it would have been obvious to one of ordinary skill in the art to utilize a nonionic surfactant in the pigment dispersion of Jakubauskas in amounts taught by Bergfried". (10/15/2007 Office Action, page 4, final paragraph).

As discussed above, the present Application is concerned with a mica pigment paste that is stable upon storage. The pigment paste is aqueous and free of grinding resins and binders. Jakubauskas is concerned with a pigment dispersion for use in a paint such as a latex paint. Sapper is concerned with a polymeric additive, and teaches a

composition consisting of 17 components which include 4 binders. Bergfried is concerned with an electrically conductive metal oxide pigment composition.

Applicants respectfully assert that there is no motivation to combine the foregoing references, since they do not read on one another as discussed in section 1 above. The Examiner is arriving at his construction through the use of improper hindsight.

The CAFC has stated that “to imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher. *W.L. Gore & Assocs., Inc., v. Garlock*, 220 U.S.P.Q. 303, 312-313. (Fed. Cir. 1983).

Therefore Applicants respectfully assert that the present claims are patentable over Jakubauskas in view of Sapper and Bergfried and that this rejection is improperly arrived at through the use of hindsight.

Secondly, even if combined in the way suggested by the Examiner, the combination does not remedy the above discussed deficiencies in Jakubauskas, such as for example the amount of mica, the amount of water, and the amount of the nonassociative thickener.

The Examiner takes the position that “it is considered that the amount of pigment is determined by the desired metallic effect and would have been obvious to one of ordinary skill in the art to utilize a suitable amount of mica in a pigment paste in order to get the desired metallic effect in a final coating comprising the pigment paste”. (10/15/2007 Office Action, paragraph bridging pages 3 and 4).

Applicants respectfully disagree. It is generally known in the art of pigment pastes that the maximum amount of pigment should be included, without adversely affecting other desirable properties such as stability, storage duration, processability, and the like. One with ordinary skill in the art would not be motivated to modify the amount of pigment within a paste to arrive at a specific amount of pigment within a composition where the paste is to be used. Instead, it is generally known that one with ordinary skill

in the art would adjust the total amount of the pigment paste, not the amount of pigment within the paste, because the amount of pigment within the paste is generally constant and specific to each paste.

Applicants respectfully assert that a prima facie is not established because the combination of Jakubauskas, Sapper, and Bergfried does not teach all elements of independent claim 1, there is no suggestion or motivation to modify the cited references to do as Applicants' have done, and the proposed modification has no expectation of success without the use of improper hindsight. Withdrawal of this rejection is respectfully requested.

CONCLUSION

Applicants respectfully submit that the Application and pending claims are patentable in view of the foregoing remarks. A Notice of Allowance is respectfully requested. As always, the Examiner is encouraged to contact the Undersigned by telephone if direct conversation would be helpful.

Respectfully Submitted,

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